REDUCING SCOUR IN COMMERCIAL PIG FARMS WITH A NOVEL PLANT EXTRACT— RESULTS OF VETERINARIAN FIELD TRIALS

Sam de Snoeck, DVM, Nederweert, The Netherlands Deborah Murray, DVM, Jackson, MN, USA

BACKGROUND: In the Netherlands, Dutch commercial pig farmers are required to reduce use of antimicrobials by 50% before 2013, as well as cease the use of 3rd and 4th generation cephalosporines and quinolones. In the USA in April 2012, the FDA issued a final guidance document that outlined ways to reduce the use of antibiotics in food-producing animals.

A novel product to substitute for use of such materials is Grazix Feed Supplement (LiveLeaf Bioscience, San Carlos, California, USA). This supplement has demonstrated a reduction of diarrhea in pigs in laboratory settings and in a few large commercial farm pilot studies. Its mode of action is hypothesized to be a modifying agent of the innate immune response in regions of the gastrointestinal tract that are stressed or injured by pathogens associated with the diarrheal response.

OBJECTIVE: Assess the use of Grazix feed supplement to reduce incidence of scour in litters of piglets prior to weaning.



Figure 1. Administration of Grazix feed supplement to piglet with evidence of scour.

piglets prior to weaning. After that time period, these same farms administered the Grazix solution to individual piglets upon first observation of scouring in the farrowing crate (Figure 1) and monitored for an identical 6 weeks to 3 months. Piglets received 1 mL of the test mixture (1 part Grazix feed supplement in 4 parts demineralised water) when scour was noted. If required, a repeat application of the solution was provided 6 to 8 hours after the initial administration. The Grazix supplement was only administered on one day and standard EU diet and husbandry practices were followed. In the USA, litters at three sow farms

METHODS: In The Netherlands, 20 farms

(units ranging from 400 to 1000 sows)

were monitored for use of antibiotics for

scour over 6 weeks to 3 months and the

incidence of scour and mortality noted for

In the USA, litters at three sow farms were monitored and at first evidence of scour a single serving of Grazix supplement was administered (1 part Grazix in 4 parts water) and the time to resolution noted. If scour did not resolve a second serving of the supplement was administered the next day.

RESULTS: In The Netherlands, piglets that consumed the Grazix solution experienced 75% fewer episodes of scour. During the time that the Grazix solution was available, these farmers required little to no use of antimicrobial agents. The mean mortality rate for piglets receiving antibiotics was 21%, while the mean mortality rate was significantly lower (p<0.0001) with administration of the Grazix supplement, 11% (Figure 2).

In the USA, over 6,000 piglets were provided the supplement. Piglets aged 0 to 8 days in 437 litters displaying scour were provided with a serving of Grazix feed supplement and in 11% of litters, the scour resolved the same day as consumption of the supplement and 72% more resolved the following day; 83% of litters required only one administration of the supplement to realize resolution (Figure 3a). Piglets aged 9 to 21 days in 62 litters who developed scour saw 15% of the events resolved the same day that the Grazix supplement was administered, with an additional 58% resolving the next day (Figure 3b). Only 27% of litters required two administrations of the supplement in order to have resolution of scour.

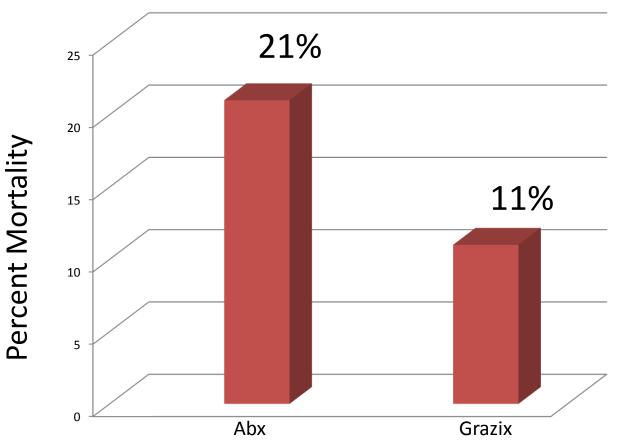


Figure 2. Percent mortality of piglets after administration of either antibiotics (N=21,717) or Grazix feed supplement (N=22,028). P<0.0001

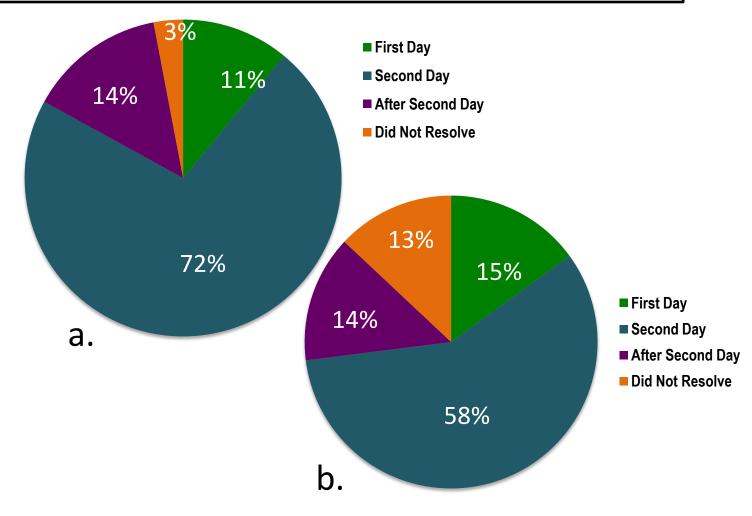


Figure 3. Percentage of piglets 1 to 8 days (a) and 9 to 21 days of age (b) in which scour resolved following consumption of Grazix feed supplement.

CONCLUSION: These field trials demonstrate that administration of this novel plant extract reduced the need for antimicrobial agents in order to maintain the health of piglets. More rigorous testing is needed to determine whether this response can be replicated and to better understand mode of action but the results noted on these farms are encouraging.